WHAT IS CLAIMED IS:

1. An optical fiber pre-form from which an optical fiber is made by drawing, the optical fiber pre-form having a maximum value V_0[log(poise)] of a radial viscosity distribution which is greater than 7.60[log(poise)] at a temperature T_s which is a temperature at which the maximum value V_0[log(poise)] of radial viscosity distribution of the optical fiber in inside area is 7.60[log(poise)] in inside and outside area equivalent to two times of mode field diameter on which light at wavelength of about 1385nm propagates through an optical fiber made by drawing the pre-form.

2. An optical fiber preform as claimed in the claim 1, wherein the preform has a multi layer structure comprising at least two clad layers including an inner clad layer having a first viscosity at a predetermined temperature and an outer clad layer having a second viscosity at said predetermined temperature, and said second viscosity is greater than said first viscosity.

3. An optical fiber preform as claimed in the claim 2, wherein said inner clad layer is formed from synthetic quartz glass and said outer clad layer is formed from quartz glass containing crystal type silica.

4. An optical fiber preform as claimed in the claim 3, wherein quartz glass containing crystal type silica as a high viscosity clad layer is native quartz or crystallization synthetic quartz glass.

5. An optical fiber preform as claimed in the claim 2, wherein said inner clad layer is formed from synthetic quartz glass having

lower viscosity than pure synthetic quartz glass by being doped with at least one of dopants essentially consisting of chlorine, germanium, fluorine, and phosphorus, and said outer clad layer is formed from synthetic quartz glass having higher viscosity than the inner clad layer by not being doped or doped with small amount of dopant.

6. An optical fiber preform as claimed in the claim 1, wherein a maximum value V_0 of viscosity distribution is greater than 7.90[log(poise)].

7. An optical fiber preform as claimed in claim from 2, in which a clad comprises at least two layers including an inner clad layer and an outer clad layer with high viscosity.

8. An optical fiber preform as claimed in claim 1, wherein the outermost clad layer has a viscosity less than V_0 at the temperature T_s.

9. An optical fiber preform as claimed in claim 1, wherein a surface of the optical fiber preform has a viscosity at temperature T_s which is lower than V_0.

10. An optical fiber preform as claimed in claim 1, wherein a portion containing at least a core and an inner clad layer is formed by VAD method, OVD method, MCVD method, and PCVD method, or by an appropriate combination thereof.

11. A method for manufacturing preform having a core and a multilayer clad, comprising steps of covering circumference of a rod comprising at least said core and an inner clad layer with

a tube containing at least a high viscosity clad layer, and unifying said rod and said tube by heating and contracting said tube.

12. A method for manufacturing preform as claimed in claim 11, further comprising unifying a rod and glass grain by heating said glass grain while depositing the glass grain forming a high viscosity clad layer on circumference of said rod comprising at least said core and said inner clad layer.

13. A method for manufacturing preform as claimed in claim 12, further comprising heating glass grain by plasma flame.

14. A method for manufacturing preform as claimed in claim 11, further comprising steps of:

forming a porous preform by depositing glass particles produced by flame hydrolysis of glass crude material containing silicon on circumference of a rod comprising at least a core and an inner clad layer;

dehydrating the porous preform at temperature range between 900 and 1200 °C in atmosphere containing dehydration gas; and

forming a high viscosity clad layer by vitrifying at temperature between 1400 and 1600 °C.

15. A method for manufacturing preform as claimed in claim 14, wherein in which dehydration gas is chlorine gas.

16. A method for manufacturing preform as claimed in claim 11, further comprising covering circumference of a rod comprising at least a core, an inner clad layer, and a high viscosity clad layer with a tube containing at least an outside low viscosity clad layer,

and unifying said rod and said tube by heating and contracting said tube.

17. A method for manufacturing preform as claimed in claim 11, further comprising forming an outside low viscosity clad layer by depositing glass particles produced by flame hydrolysis of glass crude material containing silicon on circumference of a rod comprising at least a core, an inner clad layer, and a high viscosity clad layer.

18. A method for manufacturing preform as claimed in claim 11, further comprising steps of:

covering circumference of a rod comprising at least a core and an inner clad layer with a tube containing at least a high viscosity clad layer; and

forming an outside low viscosity clad layer by depositing glass particles generated by flame hydrolysis of glass crude material containing silicon, while unifying said rod and said tube by heating and contracting said tube.

19. A method for manufacturing preform as claimed in claim 11, further comprising steps of: covering circumference of a rod comprising at least a core and an inner clad layer with a tube containing at least a high viscosity clad layer and an outside low viscosity clad layer; and unifying said rod and said tube by heating and contracting said tube.

20. An optical fiber manufactured by heating and drawing a preform having a maximum value V_0[log(poise)] of a radial viscosity distribution which is greater than 7.60[log(poise)] at a temperature T_s which is a temperature at which the maximum value

V_0[log(poise)] of radial viscosity distribution of the optical fiber in inside area is 7.60[log(poise)] in inside and outside area equivalent to two times of mode field diameter on which light at wavelength of about 1385nm propagates through an optical fiber made by drawing the pre-form.

21. An optical fiber as claimed in claim 20, wherein a transmission loss at wavelength of 1385nm is equal to or less than 0.35dB/km, preferably equal to or less than 0.30dB/km.

22. An optical fiber as claimed in claim 20, wherein a transmission loss at wavelength of 1385nm is equal to or less than 0.35dB/km in case that said optical fiber is exposed to atmosphere containing 1% hydrogen for four days.

23. An optical fiber as claimed in claim 20, wherein a transmission loss at wavelength of 1385nm, in case that the optical fiber is exposed to atmosphere containing 1% hydrogen for four days, does not substantially change compared with transmission loss at wavelength of 1385nm before exposed to the atmosphere.